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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,412	09/29/2000	Russell Anderson	5240	9663

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GLENN PATENT GROUP  
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EXAMINER
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KESACK, DANIEL

ART UNIT	PAPER NUMBER
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3624

DATE MAILED: 02/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/675,412	<b>Applicant(s)</b> ANDERSON ET AL.	
	<b>Examiner</b> Dan Kesack	<b>Art Unit</b> 3624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 6/8/2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/7/2002</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 8, 2005 has been entered.

### ***Claim Objections***

2. Claim 13 objected to because of the following informalities: the claim is identical to claim 11. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-4, 6-13, 18, 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Deaton U.S. Patent No. 5,649,114, in view of Gopinathan U.S. Patent No. 5,819,226.

Claim 1-4, 18, 19, Deaton teaches a system receiving transaction information, from a transaction between a merchant and a customer, extracting department, product and product group related to the purchase transaction (Figure 18A), grouping products together to form product groups, and determining which product group a given transaction should be associated with (column 68 lines 20-63), associating a stored customer record with said department, product, or product group as determined by product group data, said customer record used in a predictive model for determining the likelihood of the occurrence of future transactions. Deaton further teaches that an important

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aspect of the disclosed invention is “to enable a store to adopt a risk management approach to credit verification based on a customer’s transactional history” (column 4 lines 54-56).

Deaton fails to teach a method of predictive models for grouping a plurality of merchants. However, Deaton teaches a method and system for predictive models for grouping a plurality of products. Deaton discloses the invention application of risk management and credit verification, and further discloses “while the prior disclosure has described infrequent shopping history criteria in terms of store purchases, department purchases or specific product purchases, it is important also to use arbitrary groupings of products and use that as a target criteria (column 100, line 29-46).” In light of these teachings, it would be obvious to one of ordinary skill in the art at the time of the Applicant’s invention modify Deaton to group products according to merchant, thereby forming the Applicant’s disclosed invention, as this would further accomplish the stated application of risk management and credit verification.

Deaton fails to teach the step of detecting fraud using predictive modeling using a calculated level of risk, determining a and determining whether to approve the transaction based on said level of risk. Gopinathan discloses a system and method of detecting fraudulent transactions using predictive modeling, and using a level of risk determined from acquired transactional data to determine whether or not to take action on a possibly fraudulent transaction (fig. 6, 14-16). It would be obvious to one of ordinary skill in the art at the time of the Applicant’s invention to modify Deaton to include these steps because

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Deaton teaches the use of predictive modeling as an application of risk management and credit verification.

Claims 6, 8, 10-13, Deaton fails to teach determining risk factors associated with a merchant group and a customer group, and applying said risk factor to the predictive model. The transaction fraud predictive model system and method disclosed in Gopinathan teaches merchant specific, and customer specific fraud variables, including average transaction amount, and average transaction volume, which are captured and used as inputs to the predictive model for determining the possibility of a fraudulent transaction (column 8 – column 17). It would be obvious to one of ordinary skill in the art at the time of the Applicant's invention to modify Deaton to include these steps because Deaton teaches the use of predictive modeling as an application of risk management and credit verification.

Claims 7 and 9, Deaton fails to teach the risk factor being an estimate of the percentage of transactions that are fraudulent in a given group. Gopinathan teaches a fraud score indicating the likelihood that a transaction is fraudulent, and a display showing the number of groups having a sufficiently high fraud score (figure 2). Whether this information is displayed as the number of high scores, or as a percentage of the total number of groups is regarded as the Applicant's intended use. Therefore, it would be obvious to one of ordinary skill in the art at the time of the Applicant's invention to modify Deaton to include

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these steps because Deaton teaches the use of predictive modeling as an application of risk management and credit verification.

Claims 5, 20-22 rejected under 35 U.S.C. 103(a) as being unpatentable over Deaton and Gopinathan as applied above, and further in view of Carter, U.S. Patent No. 5,878,419.

Deaton and Gopinathan teach obtaining transactional information from transaction data, but fail to teach a method for deriving said data, as the applicant describes, from raw transaction data by stemming and equivalencing the raw data, and determining low categorical information from high categorical text data related to the transaction.

Carter discloses a method for translating a formatted transaction into relational form so that the data can be manipulated as structured, relational data, breaking streams of data into elements that are translated as grouped parameters corresponding to different information pertinent to the transaction. (column 3 lines 1-8 and figures 13-20). It would be obvious to one of ordinary skill in the art at the time of the Applicant's invention to modify Deaton and Gopinathan to obtain transactional data in this manner because Carter's description of the raw EDI data is substantially equivalent to the format of raw data produced in a credit card transaction.

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Claims 14-17, 23 rejected under 35 U.S.C. 103(a) as being unpatentable over Deaton and Gopinathan as applied above, and further in view of Sheppard, U.S. Patent No. 6,026,397.

Deaton and Gopinathan fail to teach the use of affinity vectors to determine the proximity representing relatedness of two groups.

Sheppard teaches a general purpose data analysis system and method for the discovery of generalized patterns in large databases of consumer transaction data for the purpose of predicting customer behavior, a neural clustering function aided by statistical parameter evaluation methods, and uses vector-based methods in the process to determine similarity measures. It would be obvious to one of ordinary skill in the art at the time of the Applicant's invention to modify Deaton and Gopinathan, combining the affinity vector methods of Sheppard with the parameter values disclosed in Deaton and Gopinathan in order to determine relationships between two groups, because Sheppard discloses using the system to predict future behavior of prospective customers, including credit risk and the likelihood of fraud. (column 20 lines 32-50).



**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Kesack whose telephone number is 571-272-5882. The examiner can normally be reached on M-F, 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vincent Millin can be reached on 571-272-6747. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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HANI M. KAZIMI  
PRIMARY EXAMINER